NORTH AMERICAN TYPHLOCYBINI.

BY CHARLES WILLIAM WOODWORTH, FAYETTEVILLE, ARK.

Although the prettiest and daintiest of the whole family, the group *typhlocybini* is the least known to entomologists, at least in this country In order to call the attention of collectors to them I will attempt to straighten out the generic groups into which they are arranged and review what is known about our native species.

The insects composing this group were included by Linnaeus, Fabricius and Zetterstedt in the old genus *Cicada* and by Germar, Herrich-Schaffer and Say in *Tettigonia*. In 1837 Curtis (Ent. mag. v. 1) made for these insects a new genus for which he proposed the name *Eupteryx* and cited *C. pictae* Fabr. as the type. He did not have correct views as to the limitation of the genus he established for we find him in his later works including in it some insects belonging to the genus *Cicadula*. The next year, 1883, Germar (Silb. Rev. Ent. v. 1.) applied the name *Typhlocyba* to the same insects and his name has been generally adopted by entomologists although the English hemipterologists have stoutly contested for the priority of *Eupteryx*. In proposing the name Germar simply mentions the following species as forming the genus: "*Cicada aurata*, *urticae vittata*, *picta*, *quercus*, Fabr., etc." Now it is evident that one of these species must be taken as the type of the genus and as all except *quercus* belong to *Eupteryx* in its most restricted sense this species is the type. The name *Typhlocyba* has been used as far as I can make out only for insects of the group *typhlocybini* possibly Fitch and Walsh may have included a few species of *Gnathodes* and *Cicadula*.

In 1840 Zetterstedt (Insecta Lapponica) included the species of this group in his genus *Cicadula*, but as I have already shown (Psyche, v. 5, p. 75) the genus *Cicadula* as first and naturally restricted excludes these forms. In 1850 Hardy (Trans. Tyneside nat. field club, p. 423) published a new British genus *Dicraneura* which seems to have been for a long time unnoticed, partly perhaps on account of its obscure place of publication and partly on account of the indisposition of European entomologists to dismember the old genus *Typhlocyba*. The next year Fitch (Rep. on state cab. Nat. Hist. N. Y. 1851, p. 62-64) ignoring or overlooking the genera already proposed made two new genera *Erythroneura* and *Empoa* for our North American species. These he separated by the possession of a quadrate cell in the apex of the elytron in the first and a triangular one in the second genus, but this character is not of generic, or even of specific value as can be proven by examining a large series of specimens of any species. I have even seen the

two forms of venation on the two sides of the same insect. All the species mentioned or described by Fitch belong to *Typhlocyba* except *fabae* of Harris. The latter was only incidentally mentioned by him as belonging to *Erythroneura* so I think it is the proper course to consider both his genera as synonyms of *Typhlocyba*. Fitch was soon aware that his genera covered the same ground as the European genus *Typhlocyba*, and five years afterward in his annual report for 1856, published the same year, he attempts to restrict the genus *Typhlocyba* to a group of insects unknown to Germar. In this he has been followed by no one but Walsh and it is an unwarranted restriction. Walsh in this same year published in the Prairie farmer and also separately (reprinted in Proc. Boston, soc. nat. hist. v. 9, p. 314-318) an article in which he makes two more genera *Chloroneura* and *Empoasca* parallel with those of Fitch and separated by the same character. They form a single genus distinct from any yet described which we will call by the shorter and euphonious name *Empoasca*.

In his "Neue gattungen" Fieber (Verh. zool.-bot gesell. in Wien 16, p. 506-509) made ten genera of the European species indicating types as follows:

Compsus elegantula H-S.
discicollis H-S.
albostriellis H-S.
Erythria areolata Fall.
Notus flavipennis Zett.
furcipatus Flor.
orichalceus Dahlb.
Chloria viridula Fall.
pura Stal.
Kybos smaragdulus Fall.
commisurallis Stal.
Anomia quercus L.
Zyginia nivea Muls.
Idia scutellaris H-S.
pullula Boh.
Typhlocyba lineatella Fall.
Eupteryx vittata L.
urticae Fabr.

He made the same error that Walsh and Fitch had in dividing the group on insufficient characters so that some of his genera had to be abandoned and two of the names (*Compsus* and *Chloria*) were preoccupied. These latter were changed by him in his "Katalog der Europaischer Cicadinen" [1872] to *Alebra* and *Chlorita*. In this same work he unites *Erythria* with *Notus* and *Idia* with *Zyginia*. The year previous Sahlburg [Cicadaria 1871] had united *Zyginia*, *Anomia* and *Idia* with *Typhlocyba* and also *Chloria* with *Kybos*. The last two he called erroneously *Cicadula*. In 1875 Douglass (Ent. mo. mag. v. 12) substituted the older name *Dicraneura* for *Notus* and now after putting in our North American genera the synonymy stands as follows:

Alebra Fieber
Compsus Fieber
Empoasca Walsh
Chloroneura Walsh
Kybos Fieber
Chlorita Fieber
Chloria Fieber

Dicraneura Hardy
Notus Fieber
Erythia Fieber
Typhlocyba Germar
Erythroneura Fitch
Empoa Fitch
Idia Fieber
Anomia Fieber
Zyginia Fieber
Eupteryx Curtis.

These genera may be very readily distinguished by the following synopsis:

A marginal vein extending all around the posterior wing parallel with the margin.

Elytra margined posteriorly. *Alebra.*

Elytra not margined.

Two apical cells in the posterior wing. *Dicraneura.*

One apical cell in the posterior wing. *Empoasca.*

No marginal vein at the tip of the posterior wing so that here the veins end in the margin.

The first two longitudinal veins uniting before reaching the margin. *Typhlocyba.*

All four veins attain the margin. *Eupteryx.*

North American species have been described as follows: by Say (Proc. acad. nat. sci. Phila., v. 4, 1825; Compl. works, v. 2, p. 259) four species; Harris (Encyclopaedia Americana 1831 and Injurious insects 1841) three species. Fitch (Rep. on state cab. nat. hist., N. Y., 1851) and (Third report on the noxious and other insects of the state of New York 1856) eight species; Stal (Stett. ent. zeit. v. 19, p. 195–196) three species Walsh as cited above thirteen species. Uhler (Bull. U. S. geol. surv. v. 3, 1877) one species and Forbes (13th rep. Ill. state entomologist 1884) one.

To *Alebra* belongs *aurea*, *pallida* and *binotata* of Walsh but the descriptions are so meagre that no one can certainly say that they are distinct. I know quite a number of very pretty forms of this genus still undescribed.

Of the described forms of the genus *Empoasca* we may make four groups of what may be but four species. The first includes *fabae* of Harris, *viridescens consobrina* and *malefica* of Walsh and *pura* of Stal which are uniform green without markings. Second *obtusa* and *maligna* of Walsh which are certainly not distinct from each other but differ from the first in having a much more obtuse vertex. Third *albopicta* of Forbes which is distinguished by the white markings on the vertex. And fourth the brilliant *aureaviridis* of Uhler.

Dicraneura is represented by *abnormis* of Walsh and *carinata* of Stal which may not be different.

In the genus *Typhlocyba* we have one of the most variable species in existence as regards the coloring, the so-called grape thrips *Typhlocyba vitis* of Harris. Just how many of the forms described as distinct species of this genus will be found to be varieties, of course it is impossible at present to say, but certainly half of the colored species so far described have been definitely made out to be varieties. The colored species are *vitis* of Harris *basilaris*, *comes*, *obliqua*, and *trifasciata* of Say, *vulnerata*, *tricincta*, *coccinia*, *vitifex* and *affinis*

of Fitch and *ziczac* and *octonotata* of Walsh. The unicolorous species are *querci* Fitch *commissuralis* Stal and *australis* and *albicans* of Walsh. *Rosae* Harris, I think, belongs here.

There are no described species of *Eupteryx* in North America but I am acquainted with several undescribed.

One would expect that several American species would be the same as European but although I have compared our species with the descriptions of the European insects and have had a considerable set of European *typhlocybini* for comparison I have yet to find one identical.

This family is certainly a promising one for study as the literature is small and, therefore, easily obtained and a rich harvest of new species is waiting to reward the student.

NOTES ON CERTAIN CYNIPIDAE WITH DESCRIPTIONS OF NEW SPECIES.

BY C. P. GILLETTE, AMES, IOWA.

(*Concluded from p. 188.*)

NEW SPECIES DESCRIBED.

GALLS ON WHITE OAK (*Quercus alba*).

Andricus foliaformis, n. sp.

Gall. Small wart-like projections thrown out from the mid-rib on the under side of the leaves from which there grows a leafy expanse that extends on all sides like the corolla of a rotate flower. (Fig. 1.)

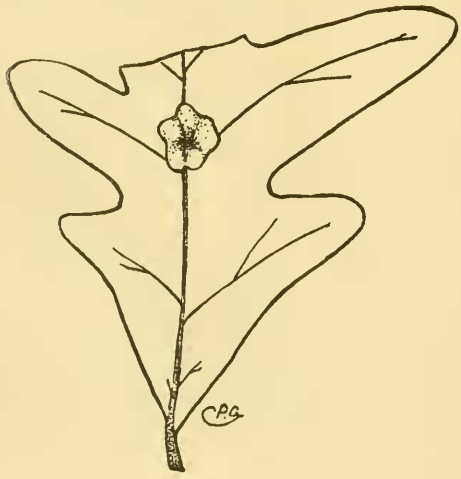

Fig. 1.

Gall-fly: Female. Head, dark reddish brown with median line of face, vertex, and occiput almost black; front and genae with many short gray hairs; vertex bare. Thorax from collar two-thirds of the way to the scutellum, between the parapsidal grooves, black; the remainder of the thorax brown. Parapsidal grooves distinct but not deep; outside of the grooves on either side a longitudinal patch of black is separated from the central black portion by a yellowish-brown line along either groove. Dorsal portion of thorax sparsely haired; pleurae rather densely haired; tegulae brown. Abdomen brown, smooth and shining, the darkest portion being on the posterior dorsal part. With a power of 50 diameters, minute punctures can be seen on the abdominal segments; second segment sparsely haired on sides. Scutellum with two fovae at base separated from each other by a narrow ridge; rounded behind, black at base, changing to